Drinking Water, Wastewater, & Stormwater

Fort Wainwright, Alaska

Environmental Officer Course

2011

Outline

I. Water Quality Program
II. Clean Water Act
III. Drinking Water
IV. Wastewater
V. Oil/Water Separators
VI. Stormwater
    a. Program requirements
    b. Best Management Practices
VII. EO Responsibilities

Water Quality Program

- Purpose:
  - To reduce the pollutant loadings in source discharges and ensure efficient water reuse.
- Major Program Components:
  - Obtain/comply with discharge permits and plans.
  - Implement stormwater and spill management plans.
  - Coordinate proposed military activities involving discharge of fill material into waters and wetlands.
  - If necessary, obtain a permit from the U.S. Army Corps of Engineers.

Clean Water Act

- Regulates discharges of pollutants into the waters of the United States

- Made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained.

Clean Water Act

- Comply with the Clean Water Act by :
  - Disposing of chemical, solvents, and Hazardous Waste properly.
  - Washing vehicles in approved washracks only.
  - Cleaning up spills in the work area imediately.
  - Reporting spills through the chain of command.

Drinking Water

What's coming out of your tap?

Water Definitions

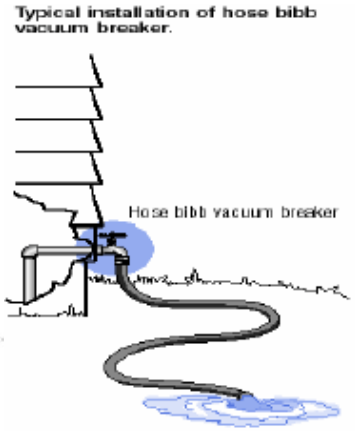
- Potable
  - Water that has been treated, determined to meet appropriate standards, and declared fit for domestic consumption by an appropriate medical authority.
- Palatable
  - Water that is agreeable to the senses.

Drinking Water

- Obtained from groundwater wells.
- Tested regularly to ensure that it meets all drinking water standards.
  - 18 AAC 80 Drinking Water
  - Safe Drinking Water Act
- Aging infrastructure can contribute to color, odor, and taste issues.

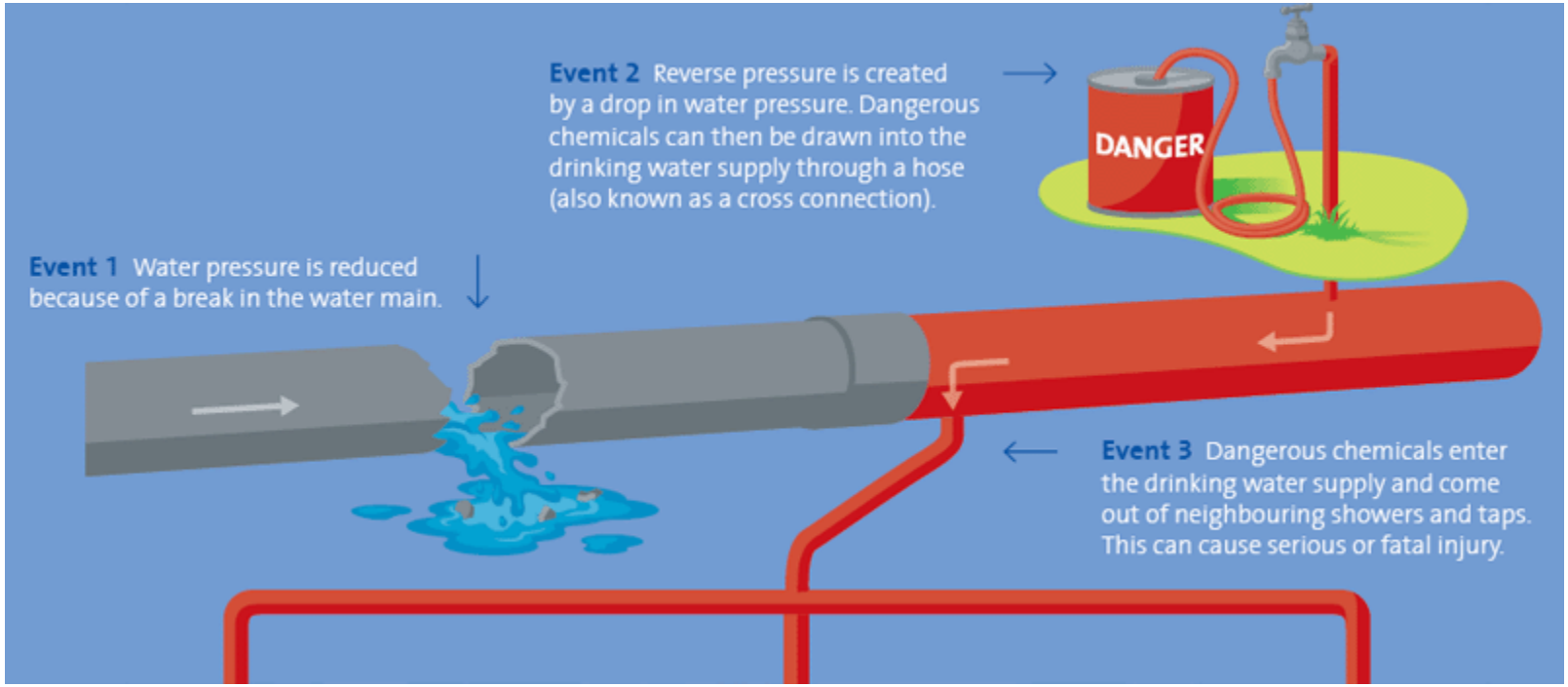
Drinking Water

- Protect drinking water by:
  - Avoiding pollution or contamination of sources.
  - Avoid cross connection with contaminated water or other liquids.



Drinking Water

- Cross connections can draw dangerous materials into the drinking water system:


Event 2 Reverse pressure is created by a drop in water pressure. Dangerous chemicals can then be drawn into the drinking water supply through a hose (also known as a cross connection).
DANGER
Event 1 Water pressure is reduced because of a break in the water main.
Event 3 Dangerous chemicals enter the drinking water supply and come out of neighbouring showers and taps. This can cause serious or fatal injury.

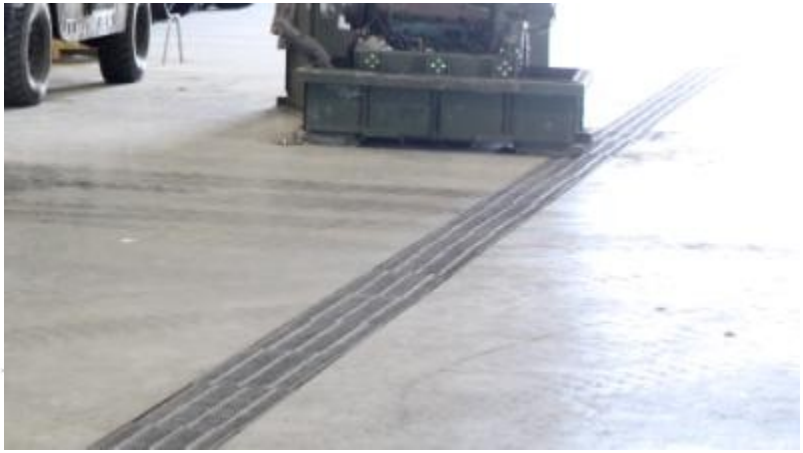
Wastewater

Wastewater

- Never dump chemicals into drains.
- Identify floor drains within your facilities and their discharge points.

Wastewater

- Maintenance bay floor drains

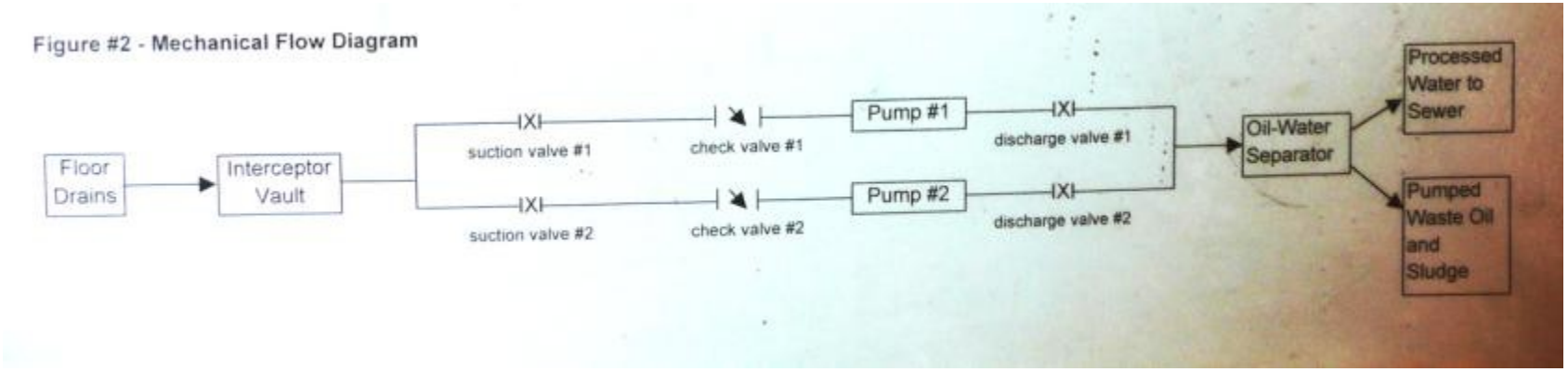


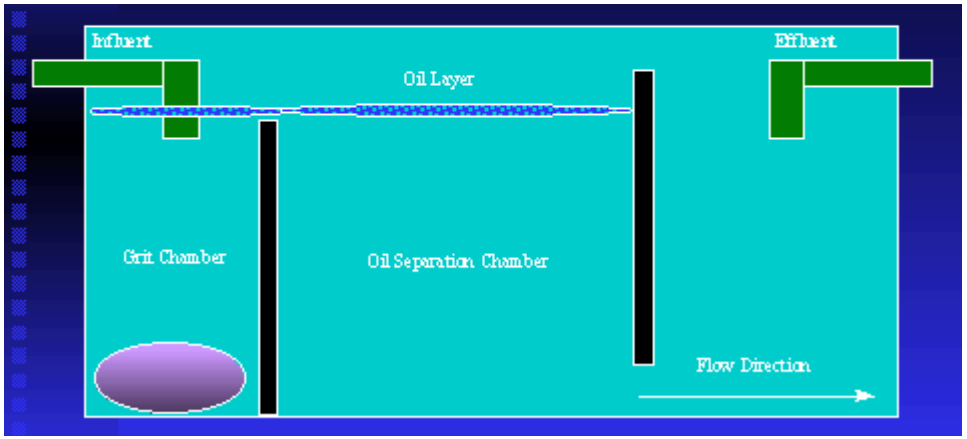
Oil/Water Separators

- Remove oil from water based on specific gravity – oil floats.
- Cannot work on emulsified oils - tiny droplets of oil suspended in the water.
- Maintained by contractors.
- Contact DPW if you are having any issues with a separator.

Oil/Water Separators

- How it works:





Oil/Water Separators

- What they look like:

Oil/Water Separators

- Locate any within your area.
- Identify the discharge point (if you can).
- Do not use detergents, emulsifiers, or any cleaners like Simple Green on wash racks or maintenance bay floors.
- Do not dump oil or other hazardous materials directly into a separator.

Stormwater

Stormwater

- Run-off and drainage from wet weather events such as rain, snow, ice, sleet, or hail.

- Stormwater at Fort Wainwright is NOT treated prior to discharge into waters of the U.S. – Chena River, Badger Pond, and wetlands.
  - Contaminated stormwater can contaminate natural waters.

Stormwater

- On Fort Wainwright, stormwater is conveyed through swales.

Stormwater

- Each facility has a specific Stormwater Pollution Prevention Facility Notebook (part of Environmental Notebook).
  - Part of the installation's Stormwater Pollution Prevention Plan (SWPPP).
- Contains requirements for the SWPPP, including inspections, training, and record keeping requirements.

Stormwater

- Specific SWPPP training is conducted annually by a contractor through Public Works Environmental (PWE).
- The same contractor conducts quarterly inspections at each facility.
- Each facility is also responsible for conducting weekly SWPPP inspections on their own.

Stormwater

- Stormwater coordinators at each facility are also required to maintain records of:
  - Weekly stormwater inspections
  - Copies of quarterly inspections
  - Stormwater training (in-house and annual)

Stormwater

- SWPPP also contains Best Management Practices for:
  - Good Housekeeping
  - Minimizing Exposure
  - Preventive Maintenance
  - Spill Prevention and Response
  - Fueling and Fuel Storage
  - Vehicle, Aircraft, and Equipment Maintenance and Washing
  - Loading and Unloading
  - Hazardous Material and Waste Accumulation Area
  - Outdoor Storage
  - Salt Storage
  - Snow Management

Stormwater

- Good Housekeeping:
  - Sweep paved areas, don’t hose them down, especially after snowmelt.
  - Properly dispose of garbage/solid waste.
  - Maintain a material inventory.
  - Label all drums, cans, containers, tanks, and valves.
  - Store materials in proper containers and on pallets, out of contact with stormwater.

Stormwater

- Minimizing Exposure:
  - Minimize the exposure of material storage areas (loading/unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and run-off.
  - Locate these areas and activities indoors or protect with storm-resistant coverings.

Stormwater

- Preventive Maintenance:
  - Inspect and maintain indoor and outdoor drainage systems.
  - Inspect, maintain, and repair/replace equipment and systems to prevent leaks or spills.
  - Inspect facility perimeter following snowmelt for evidence of erosion, and implement erosion control measures as necessary.
  - Maintain records of inspections and maintenance.

Stormwater

- Spill Prevention and Response :
  - Follow installation spill notification and response procedures.
  - Maintain spill kits and ensure personnel know where they are.
  - Plainly label containers to facility rapid response if leaks or spills occur.
  - Implement preventive measures, such as barriers, secondary containment, and procedures for material storage and handling.
  - Report ALL spills to Emergency Services and PWE.

Stormwater

- Fueling and Fuel Storage:
  - Ensure personnel have proper training, especially for bulk fueling.
  - Ensure the use of secondary containment.
  - Have spill kits stocked and nearby.
  - Store fuel in the proper containers, with tight fitting lids.
  - Ensure that all fuel containers and dispensing equipment is inspected and maintained regularly.

Stormwater

- Vehicle, Aircraft and Equipment Maintenance:
  - Follow “Good Housekeeping” and “Minimizing Exposure” procedures.
  - Properly dispose of all fluids – do not pour anything down any drains.
  - Store used batteries in leak-proof secondary containers.

Stormwater

- Vehicle, Aircraft and Equipment Washing:
  - Wash only in designated facilities/areas.
  - Do not use soap or detergent if drain leads to an Oil/Water Separator.
  - Do not drain to a storm drain.
  - Do not dispose of any materials or waste down wash rack drains.

Stormwater

- Loading and Unloading:
  - Load/unload indoors whenever possible.
  - Do not open new chemical containers until indoors.
  - Always have a stocked spill kit accessible.

Stormwater

- Hazardous Material and Waste Accumulation Area:
  - Follow all applicable requirements in PAM 200-1 U.S. Army Alaska Hazardous Material and Waste Management Plan.
  - Provide secondary containment for all liquid materials and waste, including batteries.
  - Do not store HW outdoors unless in an approved enclosure
  - Do not expose HM containers to weather.

Stormwater

- Outdoor Storage:
  - Keep materials out of contact with run-on and run-off, and covered.
  - Use secondary containment for all liquids.
  - Use drip pans for all vehicles, equipment, and leaking POVs.
  - Regularly inspect (weekly) vehicle and equipment storage areas for leaks and promptly address any discovered.

Stormwater

- Snow Management:
  - Inspect for pollutants in snow pack at least weekly and before any new snowfall.
  - Collect and properly dispose of trash and POL in snow immediately.
  - Snow stockpiles must be at least 100 feet from storm water drain or pond, and must be on permeable ground.
  - Ensure that run-off from melting snow is not causing erosion.

EO Responsibilities

- Develop, implement, and update unit standard operating procedures for spills.
- Ensure that facilities maintain requirements addressed in Stormwater Pollution Prevention Notebook including:
  - Weekly inspection records
  - Quarterly inspection records
  - Training records
- Ensure proper procedures are followed for the storage, use, and disposal of materials.

END

INSTALLATION MANAGEMENT COMMAND

IMCOM
SOLDIERS • FAMILIES • CIVILIANS

"Sustain, Support and Defend"